Crisis, Crowdsourcing, and Maps

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DMA 1:12,500 City Graphic circa 1960's

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Port-au-Prince

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The Data Scramble

- The earthquake did not completely disrupt cell phone services, though local emergency numbers did fail. As a result, survivors trapped in debris called and/or sent text messages to relatives in cities such as New York, posted to Facebook or Twitter, which were in turn, forwarded to assistance agencies.
- CrisisMappers.net stood up a listening service that permitted the geo-coding of such messages – it was called USHAHIDI (www.ushahidi.com)

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- While the USHAHADI team worked, GeoEye had satellites in the “right place” at the “right time” to capture post-event imagery. This imagery was processed near-real time and handed to Google.
- Google published the imagery for download and as a kml that could be loaded as a map service.
- Open Street Map (www.osm.org) pushed the imagery to its constituents who vectorized features.
- The result: the known street map of Haiti went from 9,000 named street segments to 72,000 in a period of about 3 days.

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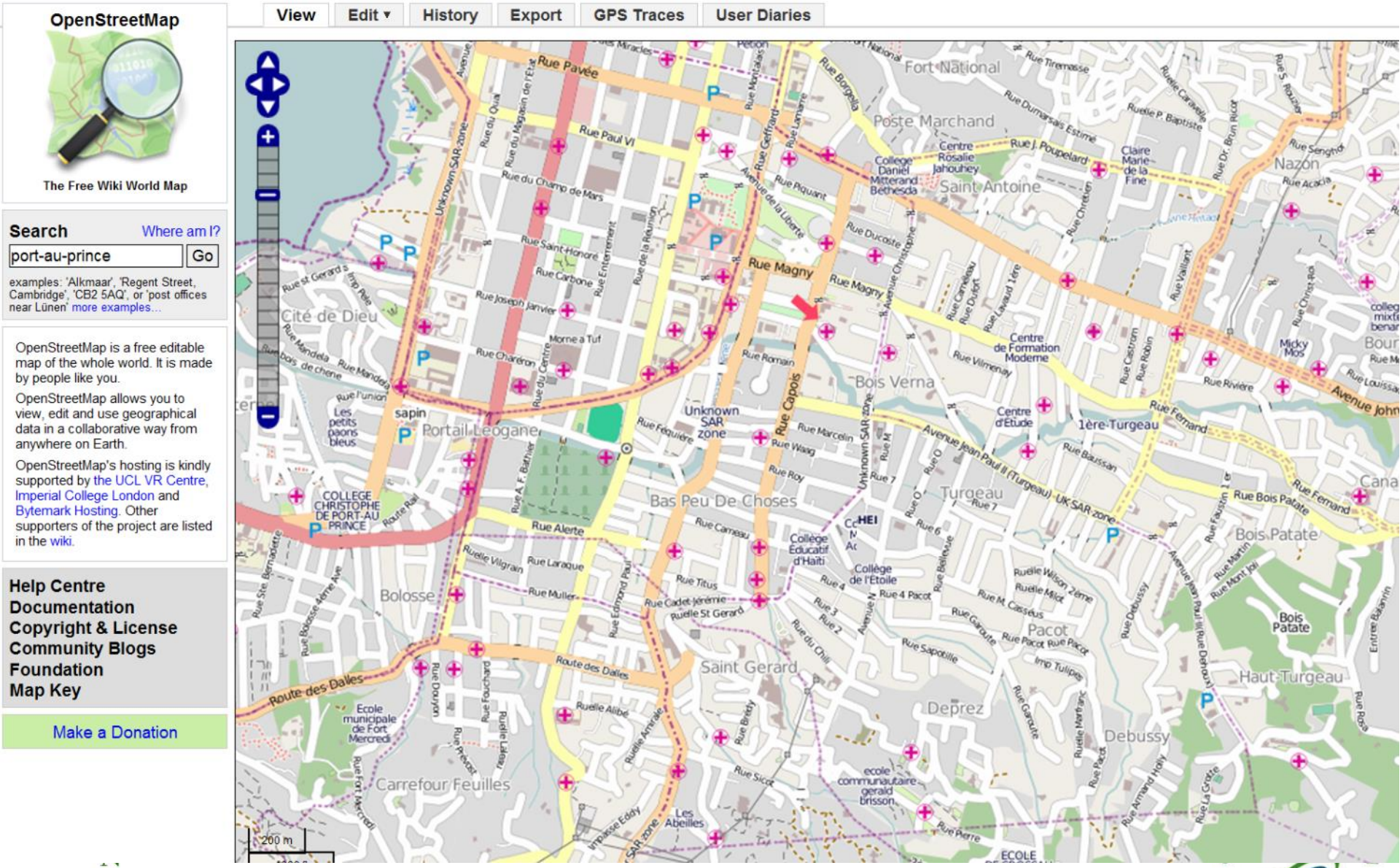
OpenStreetMap
The Free Wiki World Map
View
Edit
History
Export
GPS Traces
User Diaries
Search
Where am I?
port-au-prince
Go
examples: 'Alkmaar', 'Regent Street, Cambridge', 'CB2 5AQ', or 'post offices near Lünen' more examples...
OpenStreetMap is a free editable map of the whole world. It is made by people like you.
OpenStreetMap allows you to view, edit and use geographical data in a collaborative way from anywhere on Earth.
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Help Centre
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Rue Pavée
Rue Paul VI
Rue Magny
Rue Capois
Unknown SAR zone
Fort National
Poste Marchand
Saint Antoine
Nazon
Cité de Dieu
Portail Léogane
Bois Verna
1ère Turgeau
Turgeau
Bas Peu De Choses
Bolosse
Saint Gerard
Pacot
Deprez
Debussy
Haut Turgeau
Bois Patate
Carrefour Feuilles
Route des Dalles
Rue Alerte
Rue Férquière
Rue Waag
Rue Roy
Rue Titus
Rue Cadet Jérémie
Ruelle St Gerard
Rue Garoute
Rue Sapotille
Rue Pacot
Rue Debussy
Avenue Jean Paul II (Turgeau)
Rue Fernand
Rue Bois Patate
Rue Baussan
Rue Rivière
Rue Vilmenay
Rue Romain
Rue Marcelin
Rue Carneau
Rue Laraque
Ruelle Vilgrain
Rue Muller
Rue Edmond Paul
Rue Boisrond Tonnerre
Rue Ste Bernadette
Rue Mandela
Rue Josephin Janvier
Rue Carbone
Rue Saint-Honoré
Rue Enterrement
Rue du Centre
Rue Chéraron
Morne a Tuf
Rue du Champs de Mars
Rue du Quai
Rue du Magasin de l'Etat
Rue Geffrard
Rue Lamarre
Rue Piquant
Rue Ducoste
Rue Christophe
Rue Dumarsais Estimé
Rue J. Poupelard
Rue Tirremasse
Rue Senghor
Rue Acacia
Rue Vaillant
Rue Castrum
Rue Robin
Rue Dufort
Rue Lavaud 1ère
Rue Chrétien
Rue Dr. Brun Ricot
Rue P. Baptiste
Rue S. Rouzier
Ruelle Caravelle
Avenue Christophe
Avenue de la Liberté
Avenue de la Réunion
Unknown SAR zone
Impasse Eddy
Les Abeilles
Ruelle Allibé
Ruelle Amirale
Rue Brady
Rue Sicot
Rue Pierre
Rue Armand Holly
Rue La Grotte
Rue Martinez
Rue Pacot
Rue Rosa
Rue Martin
Rue Mont Joli
Rue Faustin 1er
Rue Bellevue
Rue Milcé
Rue Wilson 2ème
Rue M. Casseus
Rue Pacot
Rue Tulipes
Rue Prévost
Rue Fort Mercredi
Rue Douyon
Rue Bolosse 4ème Ave
Route Rail
Rue A.F. Bathier
Rue du Chili
Rue 1
Rue 2
Rue 3
Rue 4
Rue 4 Pacot
Rue 6
Rue 7
Rue O
Rue M
Avenue N
Avenue Jean Paul II (Rue Donoun)
Entrée Balancin
Micky Mos
Claire Marie de la Fine
Centre Rosalie Jahouhey
College Daniel Mitterand Bethesda
Centre de Formation Moderne
Centre d'Etude
Collège Educatif d'Haiti
Collège de l'Etoile
COLLEGE CHRISTOPHE DE PORT-AU PRINCE
Les petits paons bleus
sapin
Ecole municipale de Fort Mercredi
ecole communautaire gerald brisson
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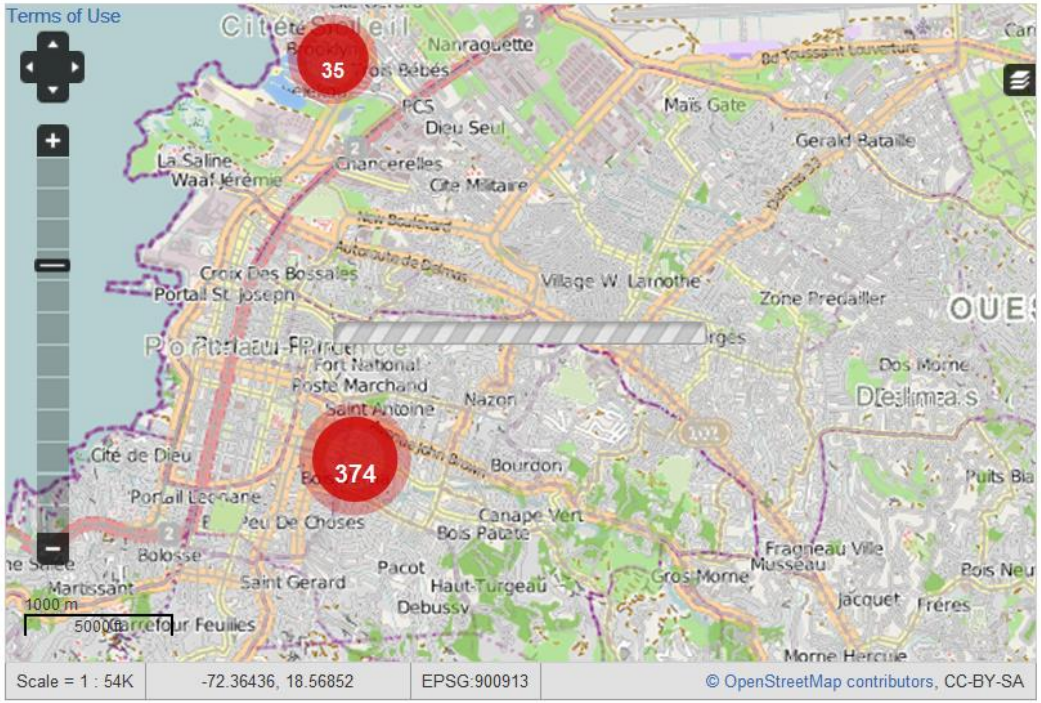
FILTERS → REPORTS NEWS PICTURES VIDEO TODO

VIEWS → CLUSTERS



TIMELINE OF EVENTS

From: Jan 12 2010 To: Oct 15 2010 PLAY

Jan 12 2010	Jun 21 2010	Nov 28 2010	May 7 2010	Oct 14 2010

300

200

100

0

CATEGORY FILTER

- ALL CATEGORIES
- 1. URGENCES | EMERGENCY
- 2. URGENCES LOGISTIQUES | VITAL LINES
- 3. PUBLIC HEALTH
- 4. MENACES | SECURITY THREATS
- 5. INFRASTRUCTURE DAMAGE
- 6. NATURAL HAZARDS
- 7. SECOURS | SERVICES AVAILABLE
- 8. AUTRE | OTHER

How to Report

SMS/Text Local: 4636.
SMS/Text International: +44 762.480.2524.

Email: haiti@ushahidi.com

Web Form: Submit Report

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Bridging the Gap

- OSM/USHAHIDI efforts unreachable within DoD/FEMA firewalls.
- No system in place to bridge the gap between volunteered efforts and actual responders on the ground.
- Lack of standards sometimes confounded use/classification of crowd-sourced data (geotags like “ford”)

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Delta State GIS

- DSU GIS consumed data from these sources to produce printable map products that could accompany responders into the disaster zone.
- These products were created by a team of faculty and students starting with 1:25,000 scale maps (first 24 hours) and then 1:6,000 scale maps over the next 12 days. A total of approximately 96,000 map sheets created, identifiable by MGRS coordinate.
- Map products were shared with Harvard (http://news.harvard.edu/gazette/story/2010/03/portals-into-haiti-chile/), FEMA, and USGS for distribution

Volunteers Needed for Map Making

The earthquakes in Nepal have left vast tracts completely devastated and thousands dead.

The Center for Interdisciplinary Geospatial Information Technologies is seeking **volunteers to help create maps** for the international response community.

**GIS experience is not required. A short training session on the basic skills needed will be provided.*

Food and drink will be provided for volunteers.

The Center for Interdisciplinary Geospatial Information Technologies at Delta State is seeking volunteers to assist with map-making throughout the week in response to the earthquakes in Nepal. Director of the Center Talbot Brooks and staff are leading the emergency response efforts on campus.

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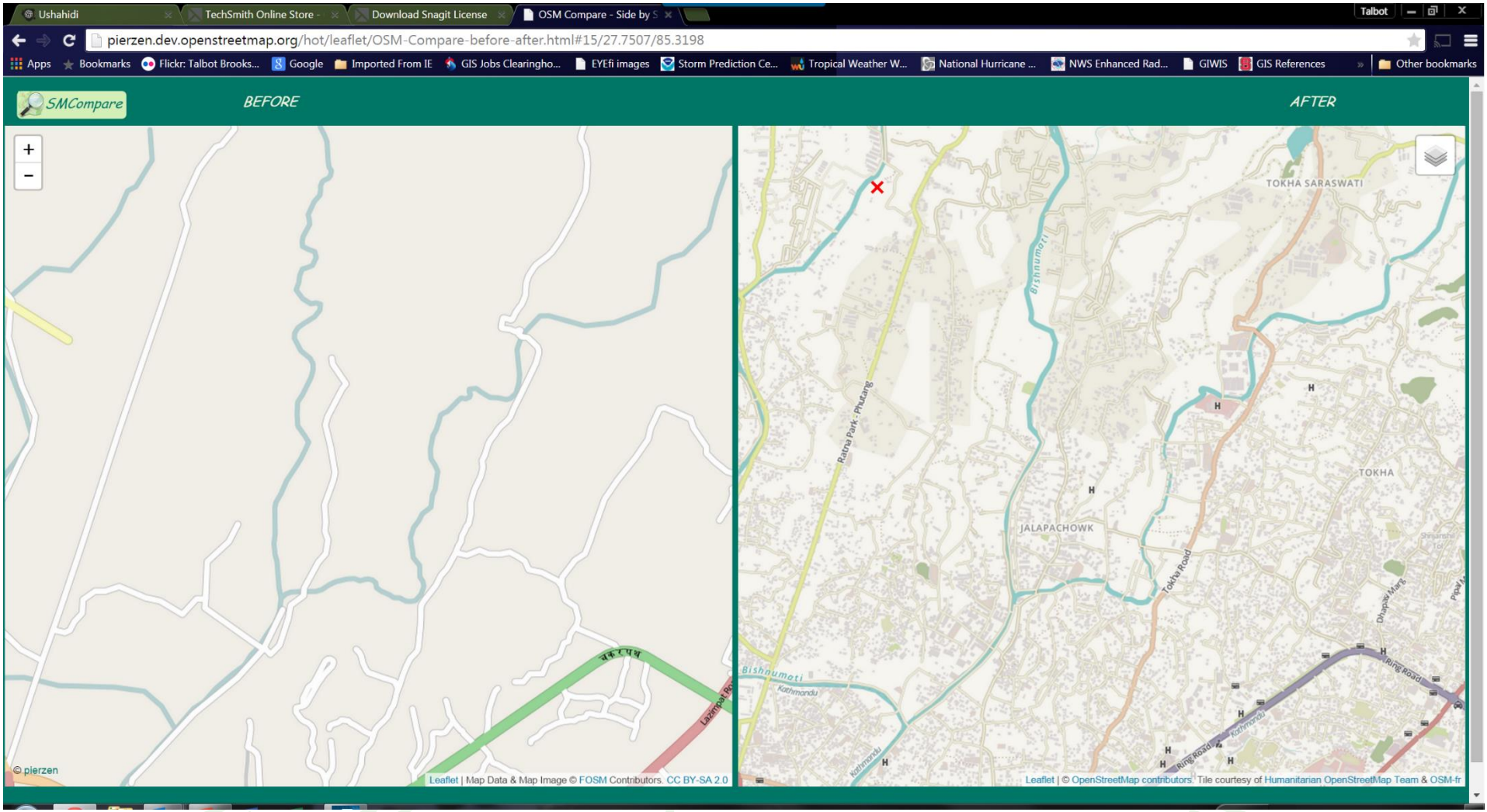

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Benefits

- Harnessing the crowd can quickly and dramatically improve situational awareness outside the disaster zone.
- Most anyone can contribute after some minimal training.
- Can capture an extremely wide range of information.

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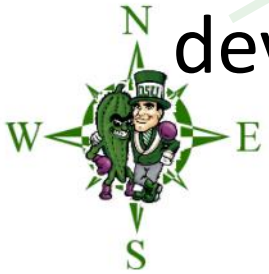
Challenges

- Standardization, especially around attribute information.
- No clear conduit for geospatial products – how does it fit into the Incident Command System?
- Printed vs. digital products in a dynamic environment.
- Bandwidth challenges, especially in developing nations or regions of the US.



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National Geospatial Intelligence Agency East Campus

N
W
S

0 1,000 Meters
0 2,500 Feet

Scale Equals 1:2,500 When Printed At 42" x 42"

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OpenStreetMap

The Free Wiki World Map

View | Edit ▾ | History | Export | GPS Traces | User Diaries

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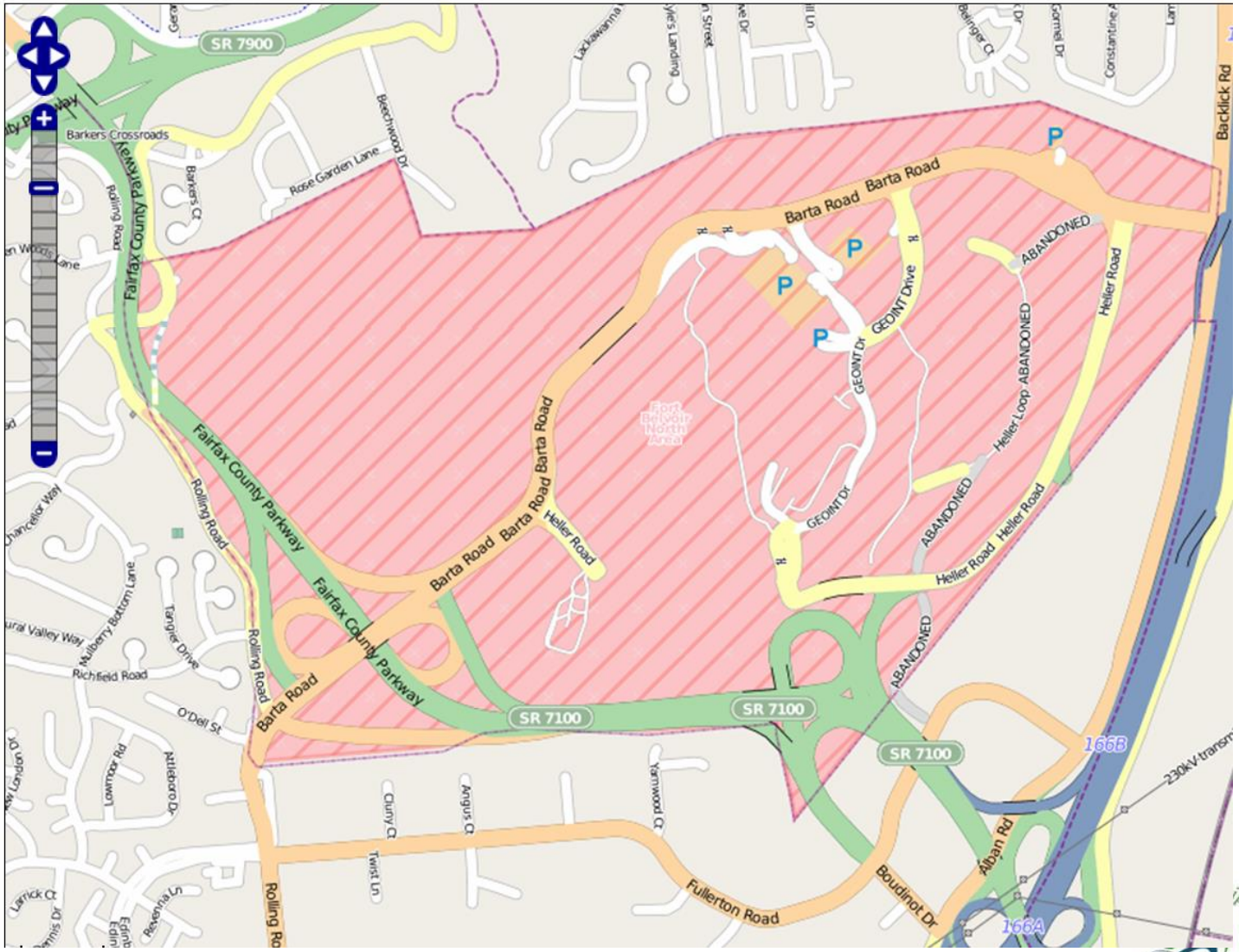

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